

## REMARKS

### Rejection Under 35 U.S.C. § 103

Claims 1, 3-5 and 9-16 remain rejected under 35 U.S.C. 103 over Reynolds US 3,808,332 in view of Lindenbaum (WO 93/04691) and further in view of Jacobs et al.(US 2005/003491). Reconsideration of this rejection is again respectfully requested.

Reynolds discloses a pharmaceutical composition comprising a carrier and the reaction product of tertiary phosphine with thyroxine and 3, 5, 3'-L-triiodothyronine. The Office Action admits, at page 2, that Reynolds fails to teach gelatin in the combination, and relies upon Lindenbaum for its suggestion regarding the use of pharmaceutical preparations containing levothyroxine or triiodothyronine and gelatin. However, Lindenbaum is directed to topical applications (i.e., wound treatment formulations," where "wound" refers to wounds of the skin). Lindenbaum does not deal with preparations in tablet or solid form. Pharmaceutical compositions of Lindenbaum involve a "delivery polymer," see page 6, paragraph 3 and page 16, the second full paragraph bridging to pages 17. Such delivery polymers include a hydrogel such as HEMA (hydroxyethyl-methacrylate) or NVP (N-vinylpyrrolidone), polyethylene glycol (PEG), gelatin, agarose, methylcellulose and related hydrophilic cellulose polymers or collagen. The delivery polymer is stated to exhibit the added benefit of slowing formation of a scab on the wound. Additionally, as can be seen on page 18, example 1, a lyophilized powder is reconstituted as a gel *using* gelatin in order to apply topically. Thus, once the gelatin has been added the pharmaceutical preparation it is in the form of a gel and not a powder. Gels, creams, etc. are known in the art as "semi-solids", not solid formulations.

It is thus respectfully maintained that one of ordinary skill in the art looking to produce tablets or solid form preparations suitable for oral administration would not look to the topical formulation disclosure of Lindenbaum for any suggestion of the use of gelatin. Neither Reynolds nor Lindenbaum suggest formulations using gelatin as a binder in a tablet or solid formulation.

Jacobs et al.(US 2005/003491) deals with secreted proteins and polynucleotides encoding them. The Examiner relies upon Jacobs et al. for teaching gelatin in solid pharmaceutical formulations comprising proteins. See page 174, paragraph 4072. Jacobs is silent regarding thyroxine or levo-thyroxine. Beginning on page 174 Jacobs discloses numerous administration

routes and dosage forms. For example, the compositions of Jacobs may be administered topically, systematically, or locally as an implant or device. They may be administered by intravenous, cutaneous or subcutaneous injection. The compositions may be in the form of a tablet, capsule, powder, solution or elixir. When administered in tablet form, the pharmaceutical composition may additionally contain a solid carrier such as a gelatin or an adjuvant. Thus, Jacobs broadly discloses numerous administration routes and dosage forms, none of which deal with thyroxin or levo-thyroxin. A skilled worker dealing with the problem of stabilization of levo-thyroxin would simply not look towards a broad generic disclosure that deals with numerous administration forms of entirely different proteins for guidance.

However, the Final Rejection argues that gelatin is "conventionally employed as a binder in tablet formations because of its well-established cohesive qualities." It is respectfully submitted, however, that it is an oversimplification of the pharmaceutical composition arts to argue, as done in the office action, that it would be obvious to employ gelatin in any solid or tablet formation. In fact, these formations are typically individualized for the specific ingredients employed therein. The fact that there is no disclosure of the particular active ingredients claimed herein with the use of gelatin, along with a well-known stabilization problem for the use of the active materials, suggests that the opposite is true.

In any event, as established on record, even if there were a prima facie case of obviousness, the declaration filed on 13 February 2008 overcomes it by establishing unexpected properties. However, on page 4 of the Office Action the Examiner states:

"In Formulation B it is unclear whether or not hydroxypropyl methylcellulose imparts a de-stabilizing effect."

Hydroxypropyl methylcellulose is a well-known conventional binder, which is very common in the manufacture of pharmaceutical tablets. This is established even by the cited references. See, Jacobs at paragraph 4080 and Lindenbaum page 17, line 1-7. Why would such a component be a common ingredient if it were expected to impart instability? The Examiner expresses doubt but does not provide any evidence, facts or reasoning sufficient to justify her allegation that hydroxypropyl methylcellulose might impart a de-stabilizing effect. All evidence is to the contrary. The Office Action simply does not provide sufficient basis in support of a *reasonable* doubt on this issue. It is well established

principle of law that, where the USPTO seeks to rely on a chemical theory in order to support a rejection, the USPTO must provide evidence supporting that theory. See *In re Grose*, 592 F.2d 1161, 201 USPQ 57 (CCPA 1979). No evidence supporting the theory that HPMC would destabilize a tablet preparation has been provided herewith, and instead, it is submitted that the declaration thus clearly established patentability of the present claims.

It is clearly shown by the data provided in the declarations of Dr. Schaffler and Dr. Lindenblatt that gelatin unexpectedly increases the stability of the formulation. The improvement in stability increases with the amount of gelatin. This alone clearly proves the stabilizing effect of gelatin, and is enough to establish non-obviousness. Even if HPMC were a destabilizer (not established) this would not affect the unexpectedness of including gelatin to enhance stability.

Accordingly, withdrawal of all of the rejections under 35 U.S.C. 103 is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

/Harry B. Shubin/

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Harry B. Shubin, Reg. No.32,004  
Attorney/Agent for Applicant(s)

MILLEN, WHITE, ZELANO  
& BRANIGAN, P.C.  
Arlington Courthouse Plaza 1, Suite 1400  
2200 Clarendon Boulevard  
Arlington, Virginia 22201  
Telephone: (703) 243-6333  
Facsimile: (703) 243-6410

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